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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,939	07/29/2003	Kalpana Shyam	SVL920020093US1	9038

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EXAMINER	
HARPER, LEON JONATHAN	

ART UNIT	PAPER NUMBER
2166	

NOTIFICATION DATE	DELIVERY MODE
04/16/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

krvuspto@ipmatters.com

Office Action Summary	Application No.	Applicant(s)	
	10/629,939	SHYAM ET AL.	
	Examiner	Art Unit	
	LEON HARPER	2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 February 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-10,31,32,37-45 and 48-56* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3-10, 31-32, 37-45, 48-56* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/3/2009 has been entered. Claim 31 has been amended. Claims 37-59 have been added. Accordingly, claims 1, 3-12, 31-32, 37-59 are pending in this office action.

Response to Arguments

Applicant's arguments filed 2/3/2009, with respect to the rejection(s) of claim(s) 1, 3-12, 31-32, 37-59 under U.S.C. 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is set forth below.

Allowable Subject Matter

Claims 11-12, 46-47 and 57-58 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 3-10, 31-32, 37-45, 48-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2002 0029211 (hereinafter Bonner) in view of US 5551027 (hereinafter Choy).

As for claim 1 Bonner discloses: receiving a fetch request to fetch data from a base table that satisfies a query predicate (See paragraphs 0006, 0015), wherein rows of the base table are stored in table partitions and wherein there is one index partition for each determined table partition (See paragraph 0041),; comparing a direction indicated in the fetch request and an ordering of the index partitions; setting a fetch direction based on a result of the comparison of the direction indicated in the fetch

request and the ordering of the index partitions (See paragraph 0089); scanning the index partitions in the fetch direction to determine a set of nodes from the index partitions whose key column value satisfies the query predicate (See paragraph 0041); ordering the set of determined nodes from the index partitions; selecting one node from the ordered set based on a position of the node in the ordering; and returning data from the table row identified by the location identifier in the selected node in response to the fetch request (See paragraph 0090).

Bonner does not disclose wherein each index partition includes nodes, wherein each node in each index partition includes at least one key column value from a corresponding table row in the table partition associated with the index partition and a location identifier identifying the corresponding table row in the corresponding table partition. Choy does disclose wherein each index partition includes nodes, wherein each node in each index partition includes at least one key column value from a corresponding table row in the table partition associated with the index partition and a location identifier identifying the corresponding table row in the corresponding table partition (See column 7 lines 19-29 and column 7 lines 38-40). It would have been obvious to an artisan of ordinary skill in the pertinent at the time the invention was made to have incorporated the teaching of Choy into the system of Bonner. The modification would have been obvious because the two references are concerned with the solution to problem of data processing therefore there is an implicit motivation to combine these references. In other words, the ordinary skilled artisan, during his/her quest for a solution to the cited problem, would look to the cited references at the time the invention

was made. Consequently, the ordinary skilled artisan would have been motivated to combine the cited references since Choy's teaching would enable user's of the Bonner system to have efficient and dynamic indexing (See Choy column 6 lines 29-35).

As for claim 3 the rejection of claim 1 is incorporated, and further Bonner discloses: wherein the fetch direction is set opposite the direction indicated in the fetch request direction indicated in the fetch request is opposite the ordering of the index partitions (See paragraph 0090).

As for claim 4 the rejection of claim 1 is incorporated, and further Bonner discloses: setting the fetch direction to backward if the fetch direction is backward and the fetch direction is not opposite the ordering of the index partitions or if the fetch direction is forward and the fetch direction is opposite the ordering of the index partitions, and setting the fetch direction to forward if the fetch direction is backward and the fetch direction is opposite index the ordering of the index partitions or if the fetch direction is forward and the fetch direction is not opposite the ordering of the index partitions (See paragraph 0090).

As for claim 5 the rejection of claim 1 is incorporated, and further Bonner discloses: if the fetch request is a first fetch of the fetch request, then selecting one node starting from one of: a lowest key value from each index partition if the fetch

direction is forward or highest key value from each index partition if the fetch direction is backward (See paragraph 0100).

As for claim 6 the rejection of claim 1 is incorporated, and further Bonner discloses: if the fetch request is not a first fetch of the fetch request, then determining whether the fetch direction in which the index partitions are scanned for a previous fetch request is a same direction as the direction indicated in a current fetch request, wherein the direction indicated in the fetch request is capable of having been modified (See paragraph 0079); and if the fetch direction for the previous fetch request and direction indicated in the current fetch request are different, then discarding all saved nodes for the index partitions and selecting one node from a last selected node (See paragraph 0090 note save point).

As for claim 7 the rejection of claim 6 is incorporated, and further Bonner discloses: if the previous and current directions are the same, then scanning in the direction of the fetch request from the previously saved node in each index partition (See paragraph 0100).

As for claim 8 the rejection of claim 1 is incorporated, and further Bonner discloses: receiving a subsequent fetch request to fetch data from the base table (See paragraph 0079), replacing a previously selected node selected in a previous fetch request in the set with one node in the index partition including the previously selected

node whose key column value satisfies the query predicate to form a modified set; selecting one node from the modified set; and returning the table row identified by the location identifier in the node selected from the modified set (See paragraph 0095).

As for claim 9 the rejection of claim 8 is incorporated, and further Bonner discloses: wherein the subsequent fetch request comprises a fetch relative request to fetch a row that is multiple number of rows from the previously selected node (See paragraph 0041), further comprising: performing the steps of replacing the previously selected node and selecting one node multiple number of times to determine the selected node to return to the fetch relative request to satisfy a fetch quantity (See paragraph 0060).

As for claim 10 the rejection of claim 8 is incorporated, and further Bonner discloses: wherein the subsequent fetch request comprises a fetch absolute request to fetch a row that is multiple number of rows from one end of the table (See paragraph 0090), further comprising: determining a new set of nodes, one from each index partition, by scanning from one end of the index partitions for a first node whose key column value satisfies the query predicate and whose key column value is greater than the previously selected node if fetching forward and the key is less than the previously selected node if fetching backward', performing the steps of replacing the previously selected node and selecting one node a number of times that is one less than the number of rows indicated in the fetch absolute request to determine the selected node

to return to the fetch relative request; and performing the steps of replacing the previously selected node and selecting one node the multiple number of times to determine the selected node to return to the fetch relative request (See paragraph 0090).

As for claim 31 the rejection of claim 1 is incorporated and further Bonner discloses: determining whether the key value of the selected node from the ordered set satisfies the query predicate; and selecting a next node form the ordered set following the selected node that odes not satisfy the query predicate (See paragraph 0092).

As for claim 32 the rejection of claim 1 is incorporated and further Bonner discloses: wherein determining the set of nodes from the index partitions comprises executing parallel tasks to process the index partitions (See paragraph 0114).

Claims 37-45 are system claims corresponding to the method of claims 1, 3-10, 31-32 and are thus rejected for the same reasons as set forth in the rejection of claims 1, 3-10, 31-32.

Claims 48-56 are article of manufacturing claims corresponding to the method of claims 1, 3-10, 31-32 and are thus rejected for the same reasons as set forth in the rejection of claims 1, 3-10, 31-32.

Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEON HARPER whose telephone number is (571)272-0759. The examiner can normally be reached on Flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on (571) 272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LJH
Leon J. Harper
April 12, 2009

/Srirama Channavajjala/
Primary Examiner, Art Unit 2166.